

Gamifying Flipped Learning for Promoting Students' Online Participation

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BACKGROUND

Flipped Learning (FL) is a technology-enhanced instructional strategy that has received a lot of attention from educators in recent years (Chen et al., 2014; Hau, 2015). This strategy moves the learning and teaching activities that conventionally take place “outside the classroom” to “inside the classroom,” and vice-versa (Bergmann & Sams, 2014; Jong, 2017). In FL, students conduct *online, lower-order* learning tasks at home, so that the in-class time can be used for engaging students in *face-to-face, higher-order* learning tasks with quality teacher-student and student-student interactions (Hwang, 2016). We have developed a pedagogic framework, namely *Flipped Issue-Based Enquiry Ride (FIBER)* (Jong et al., 2019), to integrate FL into social enquiry learning. The present proposal is to further gamify the online components of FIBER so as to promote students' outside-the-classroom participation.

GAMIFICATION OF FIBER

The design of FIBER is theoretically grounded upon Stripling's (2003, 2008) six-phase social enquiry learning model. Figure 1 illustrates the implementation of FIBER for learning and teaching a social enquiry module (based on a societal issue). *Connection* (Phase 1), *Comprehension* (Phase 3), and *Expression* (Phase 5), which involve lower-order learning (*i.e., remembering and understanding* in Blooms' Taxonomy [Anderson et al., 2001]), take place outside the classroom. *Exploration* (Phase 2), *Construction* (Phase 4), and *Reflection* (Phase 6), which involve higher-order learning (*i.e., applying, analysing, evaluating and creating* in Bloom's Taxonomy), take place inside the classroom. The full delineation of FIBER can be found in our previous paper (Jong et al., 2019).

The term, “Gamification,” refers to the use of *game mechanics* and *experience design* to *digitally* engage people in achieving *intended goals* in non-game contexts (Burke,

2014; Deterding et al., 2011). Educational gamification is an approach to integrating the idea of gamification into the educational process to support students in attaining intended educative goals engagingly (Dominguez et al., 2014; Jong et al., 2018; Kapp, 2012). To gamify the online components (i.e., Phases 1, 3, and 5) of FIBER, we have adopted Lee et al.'s (2011) three-dimensional framework for gamifying learning environments. Regarding the *cognitive* dimension, the gamified environment should contain a system of rules connecting to a series of learning tasks while each task (and the corresponding goal) can be further divided into a number of sub-tasks (and the corresponding sub-goals). Regarding the *emotional* dimension, the gamified environment should provide students with feelings of “success” and “failure” in the learning process. In the *social* dimension, the environment should possess learning tasks that facilitate social interactions (in the form of collaboration and/ or competition) among students. Figure 1 (the left-hand side) describes how Lee et al.'s framework is implemented to gamify the outside-the-classroom phases of FIBER.

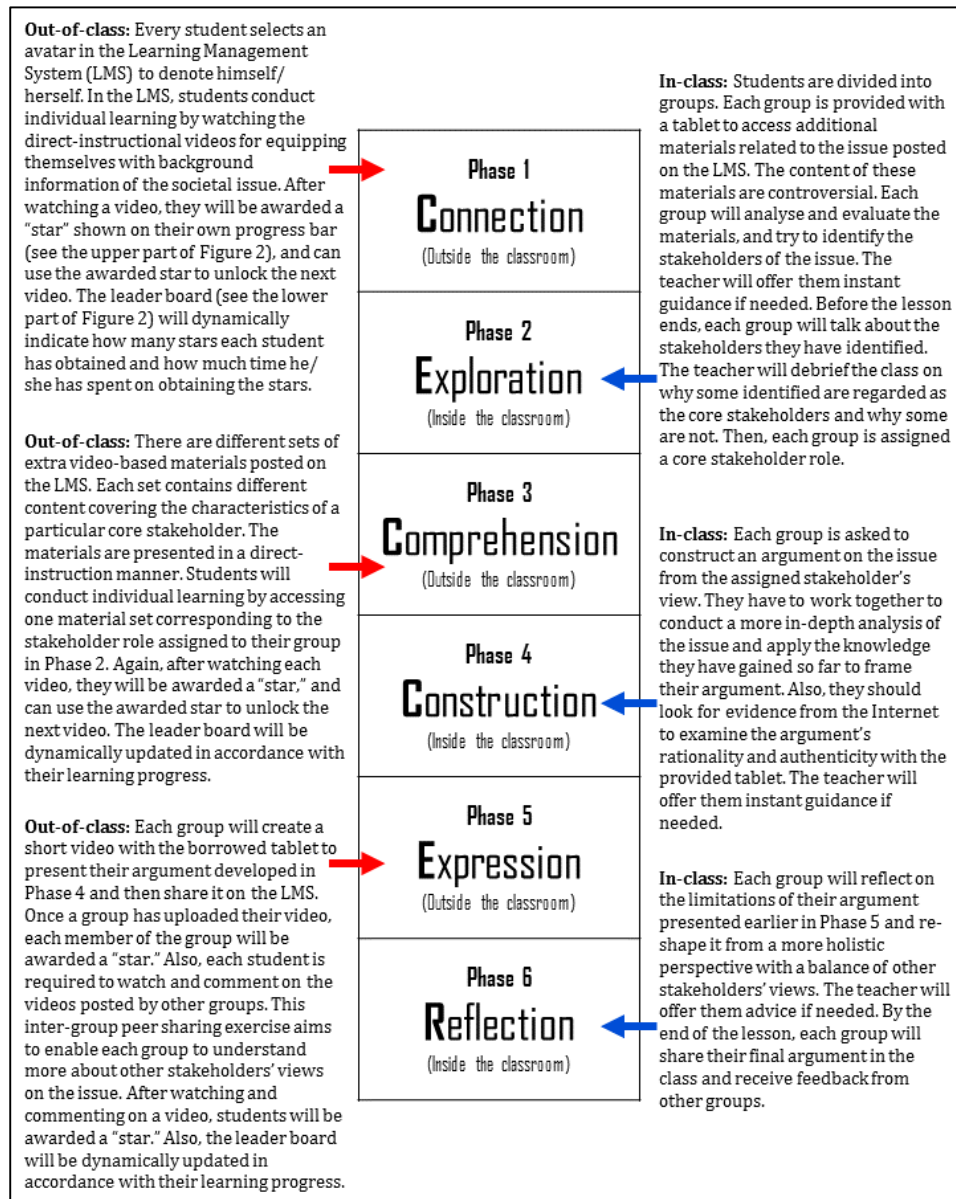


Figure 1: Gamification of FIBER.

COMING WORK

An experimental study involving different academic achieving students will be carried out to evaluate the pedagogic effectiveness of gamified FIBER (namely, g-FIBER) in comparison with FIBER (the original), in terms of knowledge acquisition.

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